

SUPPORT FOR THE AMENDMENT

Claim 1 is amended to use the open transitional language “comprising.” Support for this amendment is found in original Claim 1.

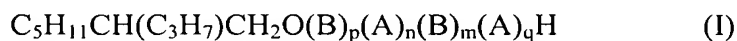
Claims 5 and 6 are amended to replace the term “parent alcohol” with “2-propyl heptanol.” Claims 5 and 6 as amended are consistent with the description of Claim 1.

No new matter will be added to this application by entry of this amendment.

Claims 1-2 and 5-10 are active.

REMARKS/ARGUMENTS

The claimed invention provides an alkoxyate mixture comprising the alkoxyates of the formula (I)



as described in Claim 1 of the present application. In the mixture from 85 to 96% by weight is an alkoxyate A1, in which  $\text{C}_5\text{H}_{11}$  is  $n\text{-C}_5\text{H}_{11}$ , and from 4 to 15% by weight is an alkoxyate A2, in which  $\text{C}_5\text{H}_{11}$  is  $\text{C}_2\text{H}_5\text{CH}(\text{CH}_3)\text{CH}_2$  and/or  $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2$ .

According to the structure of formula (I) the alkoxyates contain four blocks of ethyleneoxy and propyleneoxy units attached in the specific order beginning at O- of propyleneoxy-ethyleneoxy-propyleneoxy-ethyleneoxy. This specific order and the relative proportions of each block is a significant aspect of the claimed invention according to which the claimed invention provides surface active substances having an optimum set of performance properties including low aquatoxicity, low odor due to unreacted alcohol, rapid wetting, low foaming and low surface tension.

Applicants have described the effect of the claimed specific sequence beginning on page 9, line 24, of the specification as follows:

In a propoxylation which, according to the invention, is preferably carried out first and is only then followed by an ethoxylation, the content of residual alcohol in the alkoxylates can be reduced since propylene oxide undergoes addition more uniformly at the alcohol component. In contrast, ethylene oxide preferably reacts with ethoxylates, so that a broader homolog distribution can result in the case of an initial use of ethylene oxide for reaction with the alkanols. The alcohol mixtures used according to the invention have, as a rule, a natural odor which can be very substantially suppressed by complete alkoxylation. Alkoxylates obtained by conventional processes often have a natural odor which is troublesome for many applications.

The novel alkoxylate mixtures require only one propylene oxide (PO) block of very short length, preferably directly bonded to the alcohol, for reducing the residual alcohol content. This is very advantageous in particular because the biodegradability of the product decreases with an increase in the length of the PO block. Such alkoxylate mixtures thus permit maximum degrees of freedom in the choice of the length of the PO block, the lower limit of the length being determined by the increasing residual alcohol content and the upper limit by the deterioration in the biodegradability.

It is not necessary according to the invention for a large residual content of alcohol to be present in the novel alkoxylate mixtures. According to an embodiment of the invention, the alkoxylate mixtures have a reduced content of alcohols or contain no alcohols.

The cited reference neither discloses, suggests or provides motivation that would have led one of ordinary skill in the art, at the time of the invention to the alkoxylates mixture described in the claimed invention.

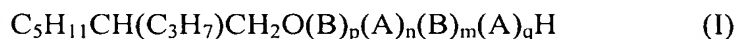
The rejection of Claims 1-2 and 5-10 under 35 U.S.C. 103(a) over Ruland et al. (WO 03/091192 equivalent to U.S. 7,371,716) is respectfully traversed.

Ruland describes an alkoxylates mixture containing alkoxylates represented by formula (I) wherein A is ethyleneoxy units and B is alkylene oxy units of 3-10 carbons or mixtures of such units (Abstract). According to Claim 1 the B unit is added to the alkoxy radical first. However, Ruland describes that (Col. 2, lines 47-50):

In the alkoxylates mixtures according to the invention, it is also possible for ethyleneoxy units to firstly be joined to the alcohol radical, followed by propyleneoxy units.

In addition, this reference describes that random addition of the units can be made in Col. 5, lines 41 to 51.

Applicants respectfully submit that nowhere does Ruland disclose or suggest the alkoxyate mixture of the formula (I) according to the claimed invention



where the mixture is based on alkoxylates of formula (I) where A is ethyleneoxy, B is propyleneoxy, A and B **are present in the form of blocks in the stated sequence, and p, n, m and q are defined according to:** p is a number from 1 to 3, n is a number from 0.25 to 10, m is a number from 2 to 10, and q is a number from 1 to 5.

Applicants have shown the combination of low aquatoxicity, low odor due to unreacted alcohol, rapid wetting, low foaming and low surface tension in the examples of the specification. Representative data is shown in the following Table.

Ex.	Req. OH	Actual OH	Unit 1	Unit 2	Unit 3	Unit 4	Wetting (sec)	Foaming (mls)	ST
1.1	69.6	71.0	5.2 EO	4.7 PO	2.3 EO		17	15	28.2
1.2	99.5	97	0.7 EO	4.7 PO	2.3 EO		45	10	27.8
2.1	75.9	76.1	1.5 PO	2.7 EO	4.7 PO	2.3 EO	39	10	28.1
2.2	80.7	79.4	1.5 PO	1.7 EO	4.7 PO	2.3 EO	61	10	28.2

Applicants respectfully submit that examples 2.1 and 2.2 according to the invention have low residual alcohol as indicated by the closeness of the OH numbers, and therefore low odor while retaining good performance in wetting foaming and surface tension (ST). In addition, because the Unit 1 according to the invention has a low number of PO units the material has good biodegradability (low aqua toxicity).

Applicants respectfully submit that Ruland does not disclose or suggest the specific alkoxyates mixture of the claimed invention. Moreover, the reference provides no motivation that would have led one of ordinary skill in the art, at the time of the invention, to the claimed mixture.

In a Precedential Opinion rendered by the Board of Patent Appeals and Interferences in *Ex parte* Whalen II (Appeal 2007-4423, Application 10/281,142) on July 23, 2008, the Board stated:

“The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some “apparent reason to combine the known elements in the fashion claimed.””

Applicants respectfully submit that Ruland provides examples only of ethoxylated alkoxyates (Examples 1-8), propoxylated alkoxyates (Examples 9) and EO/PO alkoxyates (Examples 10) and does not disclose or suggest the alkoxyates mixture according to Claim 1.

Moreover, Applicants respectfully submit that Ruland neither suggests nor provides motivation to one of ordinary skill in the art which would lead to the specific alkoxyates mixture according to the claimed invention.

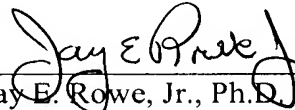
In view of the foregoing, Applicants respectfully submit that the cited reference cannot render the claimed invention obvious and withdrawal of the rejection of Claims 1-2 and 5-10 under 35 U.S.C. 103(a) over Ruland is respectfully requested.

The rejection of Claims 1, 2 and 5-10 under 35 U.S.C. 112, first paragraph, is believed obviated by appropriate amendment. Claim 1 is herein amended to use the open transitional language “comprising” originally present in the claim. Withdrawal of the rejection of Claims 1, 2 and 5-10 under 35 U.S.C. 112, first paragraph, is respectfully requested.

Applicants respectfully submit that the above-identified application is now in condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon

  
Jay E. Rowe, Jr., Ph.D.  
Registration No. 58,948

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 08/07)